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ABSTRACTS OF PATENTS

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Pat. 2,331,948. PRODUCTION OF LACTIC ACID, George E. Ward and Benjamin Tabenkin, patented Oct. 19, 1943. Lactic acid is obtained in either the racemic or optically active form from impure racemic or optically active lactate-containing liquors. The lactate is first converted into zinc lactate and this zinc salt added to a chemically equivalent quantity of strong sulfuric acid. The temperature is maintained at 35° to 80° C. for sometime. The mixture is cooled to 0° to 25° C. and precipitated zinc sulfate removed. The lactic acid remains as a clear solution.

Pat. 2,351,500. GLUCONIC ACID PRODUCTION, Andrew J. Moyer, patented June 13, 1944. Glucose is converted to gluconic acid by fermentation. The invention applies to either fungal or bacterial fermentations, and is carried out with aeration and agitation. Boric acid is added prior to the precipitation of the gluconic salts. This prevents precipitation of the salts formed by the fermentation without inhibiting the fermentation. This stabilizing effect facilitates the use of concentrated mashes.

Pat. 2,354,393. PROCESS FOR EXTRACTING PROLAMINES, Ralph H. Manley and Cyril D. Evans, patented July 25, 1944. Prolamines are extracted from vegetable material, for example, zein from corn gluten, and gliadin from wheat gluten. An alcoholic extraction is employed using many alcohols and similar prolamine dispersing media. An aldehyde or aldehyde-yielding agent is added. The presence of the aldehyde eliminates danger of gelation during the extraction and subsequent processing. The resulting extracts may be clarified and concentrated in the liquid phase. If the extraction is carried out at elevated temperatures in closed containers, solvent losses and extraction time are reduced.

Pat. 2,357,839. PLASTIC COMPOSITION, Ralph H. Manley and Cyril D. Evans, patented September 12, 1944. Proteins of cereal grains, such as gliadin from wheat, zein from corn, or hordein from barley are used as base materials for synthetic resins, coating compositions and similar plastic products. The proteins are preferably modified with an aldehyde either before or during the formation of the composition. The main feature of the invention is the use of a plasticizing amount of a "polymeric fat acid." These acids are obtainable from polymerization of glyceride oils or free fat acids. They are usually dimers of long-chain fatty acids containing a small amount of trimer. The resulting plastic has many uses in coatings, plastics, and synthetic films.

Pat. 2,359,950. LEVO-2,3-BUTYLENE GLYCOL AND A METHOD FOR PRODUCING THE SAME, George E. Ward, Lynferd J. Wickerham, Orpha Glenn Pettijohn and Lewis B. Lockwood, patented October 10, 1944. The chemical produced is an isomer of known compounds. It is produced by the fermentation of carbohydrate material with Aerobacillus polymyxa. The fermentation is carried out maintaining the inoculated mash in a quiescent state. It is a process that is much simpler than other fermentation methods for producing 2,3-butylene glycol.

Pat. 2,368,668. PRODUCTION OF WHEAT STARCH, Cecil T. Langford and Richard L. Slotter, patented February 6, 1945. Wheat grain is steeped in water containing sulfur dioxide. The grain is then comminuted to a pulp and slurried with water. An aqueous suspension of starch and gluten is obtained by screening the slurry to remove the coarse particles. The screened material is then allowed to settle, yielding a sediment of wheat starch and a supernatant layer consisting of an aqueous suspension of wheat gluten.

Pat. 2,369,435. HEAT TRANSFER COMPOSITION, Robert D. Coghill and Reid T. Milner, patented February 13, 1945. A liquid heat transfer composition consisting of water and substantially pure levo-2,3-butylene glycol is described. It is of special value in cooling systems where the cooling agent is exposed to temperatures much above the ordinary, as well as to temperatures below the freezing point of water, conditions which occur, for example, in cooling systems of internal combustion engines.

Pat. 2,370,266. PROTEIN PRODUCT AND PROCESS FOR MAKING SAME, Allan K. Smith, Herbert J. Max and Donald H. Wheeler, patented February 27, 1945. A protein base coating composition for paper is described. The invention relates particularly to soybean protein which has been rendered light in color by bleaching with a dithionite. The bleached protein may be mixed with clay and used to coat paper.

Pat. 2,372,221. ACETYLATING 2,3-BUTYLENE GLYCOL, Samuel A. Morell, patented March 27, 1945. The invention relates to a new method for acetylating 2,3-butylene glycol with the impure acetic acid obtained from the pyrolytic decomposition of 2,3-butylene glycol diacetate to butadiene. The acetylation is carried out in the presence of an entraining agent comprising a low boiling ether. The agent is characterized by the fact that it will not form an azeotrope with acetic acid but will form one with water. In this manner, the pryolysis of 2,3-butylene glycol diacetate to form butadiene and the subsequent esterification of the impure acetic acid obtained as a byproduct may be carried out in combination so that a continuous process is developed.

Pat. 2,372,437. FILTER MEDIUM, Elbert C. Lathrop and Samuel I. Aronovsky, patented March 27, 1945. The invention relates to filter mediums adapted to remove the harmful ingredients from contaminated air. The medium consists of a mixture of short, thin, purified alpha-cellulose fibers of high natural ash content, and long, purified cellulosic fibers. The short fibers are prepared from agricultural residues, such as cereal straw, grasses, stalks, stems, or weeds. The filters may be used in gas masks and are considerably less expensive than the best prior filters.

Pat. 2,373,015. POLYMERIC MATERIALS, John C. Cowan and Waldo C. Ault, patented April 3, 1945. Polymeric materials are obtained by first converting compounds containing radicals of unsaturated fat acids, such as the free acids, their glycerides or their esters with monohydric alcohols, to the polymeric acids. These acids are then reacted with dihydric alcohols, such as ethylene glycol. The products thus obtained are viscous substances, valuable as components or intermediates in the manufacture of plastics, resins, plasticizers, adhesives, compositions of rubber, and the like.

Pat. 2,384,443. PLASTIC COMPOSITION, John C. Cowan and Howard M. Teeter, patented September 11, 1945. The invention relates to plastic compositions suitable for use as substitutes for natural rubber. An ethylene glycol polyester of a polymeric fat acid is intimately mixed with a vulcanizing agent, such as sulfur, and the mixture heated until it becomes millable. It is plasticized by milling. The products have properties closely approximating those of natural rubber.

Pat. 2,392,084. PREVENTION OF GELATION OF SOLUTIONS OR DISPERSIONS OF PROLAMINES, Cyril D. Evans and Ralph H. Manley, patented January 1, 1946. Prolamines, such as zein, gliadin, and hordein tend to set to a gel when dissolved in a large number of solvents, The invention relates to a process for stabilizing the solutions consisting of heating the solution at a temperature above 100° C. and under such conditions of pressure and time that evaporation of the dispersing medium is not substantial and the dispersion is stabilized without setting the prolamine as a gel.

Pat. 2,399,840. ISOLATION OF PENICILLIN FROM AQUEOUS SOLUTIONS, Jacques L. Wachtel, patented May 7, 1946. Penicillin is present in extremely small quantities in biological fluids, such as the fermentation liquor resulting from the culture of penicillin-producing molds. The invention consists of a method for recovering penicillin comprising absorbing the penicillin onto activated carbon, separating the carbon from the fluid, and eluting the penicillin from the carbon with an aqueous solution of an organic, aliphatic ester containing a substantial concentration of water.

Pat. 2,414,195. PROCESS FOR OBTAINING INCREASED YIELDS IN THE EXTRACTION OF CORN PROTEINS, Cyril D. Evans and Chester W. Ofelt, patented January 14, 1947. Increased yields of corn protein from crude corn gluten are obtained first treating the gluten with a zein solvent, then extracting the treated gluten with an aqueous alkali solution. The solvent treatment splits the protein complex of the gluten to make more protein available to extraction by alkali. The method results in yields of 98 percent or more of total nitrogen.

Pat. 2,415,734. SACCHARIFICATION PROCESS, Robert G. Dworschack and Everette M. Burdick, patented February 11, 1947. The patent relates to the conversion of starch prior to ethyl alcohol fermentation. The method is to convert substantially completely the starch in starchy materials to fermentable sugars by mixing with water, acidifying, and alternately premalting it with malt solids and cooking it a plurality of times. At least one of the cooking temperatures should be at least 150° C. The process is followed by saccharification with malt extract. The entire conversion can be completed in 1 to 3 hours.

Pat. 2,422,455. METHODS OF PREPARING A DIASTATIC AGENT, Lynford J. Wickerham, patented June 17, 1947. The patent relates to the preparation of an enzyme agent useful in desizing and in the liquefaction, dextrinization, and saccharification of starchy materials. The enzymes are produced by cultivating yeasts of the species Endomycopsis fibuliger in contact with a starch-containing substrate. The enzyme preparation may be used in the wet state, as obtained direct from the culture medium, or it may be dried and preserved for subsequent use.

Pat. 2,423,475. INTERNAL SURGICAL DRESSING, Claude W. Bice and Majel M. MacMasters, patented July 8, 1947. Starch material is used in an internal surgical dressing. The starch is used in the form of a sponge, made by freezing a starch paste and subsequently thawing it. An intra-blood medicament may be incorporated into the pores of the sponge, and the medicated sponge implanted in living animal bodies, where it will be slowly absorbed by the body fluids.

Pat. 2,423,873. METHOD FOR PRODUCTION OF INCREASED YIELDS OF PENICILLIN, Robert D. Coghill and Andrew J. Moyer, patented July 15, 1947. Penicillin is produced by cultivating a penicillin-producing mold in an aqueous nutrient medium. When the pH of the medium attains a value between 4.6 and 8.0, a small amount of phenylacetic acid, its salts or its esters is added. The yield of penicillin is about doubled when following the process of the patent.

Pat. 2,424,003. METHOD FOR THE PRODUCTION OF RIBOFLAVIN BY CANDIDA FLARERI, Fred W. Tanner, Jr., and James M. Van Lanen, patented July 15, 1947. The patent relates to the production of riboflavin (vitamin B_2) by fermentation methods employing Candida flareri for the synthesis. The organism is cultivated under aerobic conditions in a growth medium containing a fermentable sugar, biotin, assimilable nitrogen, sulfur, phosphorous, magnesium and iron. After a 5-7 day fermentation the riboflavin content of the culture liquor is much greater compared with the results of other organisms commonly used for the synthesis.

Pat. 2,424,184. TERTIARY AMINO PENTANOLS AND ESTERS THEREOF, Samuel A. Morell, patented July 15, 1947. Furfural is hydrogenated to tetrahydromethylfuran and then reacted with an organic acyl halide to form a mixture of isomeric primary and secondary halogen substituted open chain esters. A secondary amine is added which reacts with the primary halogen ester to form a tertiary amino ester. This is then converted into the tertiary amino pentanol by treatment with alkali. The product is useful in the synthesis of anti-malarial pharmaceuticals.

Pat. 2,427,699. CROWN CLOSURES, Samuel I. Aronovsky, William F. Talburt and Elbert C. Lathrop, patented September 23, 1947. A cork substitute for use in crown bottle caps is made from finely divided particles of a pithy nature which contain groups of microscopic gas cells, incorporated in a proteinaceous material such as gelatin, glue, soybean protein or casein. The composition also contains a uniform distribution of minute gas cells. The material may be poured into the crowns while still fluid, or it can be molded into rods or sheets from which discs may be cut for insertion into the crowns. The material has structure and properties similar to those of natural cork.

Pat. 2,429,219. PROCESS OF MAKING LINEAR SUPERPOLYESTERS, John C. Cowan and Donald H. Wheeler, patented October 21, 1947. The patent relates to high molecular weight dihydric alcohol polyesters of dimeric, dibasic fat acids derived from heat-bodied vegetable oils containing a plurality of double bonds. The esters are linear superpolyesters and are useful as base materials in the preparation of elastic compositions. They can serve as suitable replacement for natural rubber in most, if not all, of its uses. They can be combined with sulfur, carbon black, accelerators, activators, and other ingredients used in rubber compounding.

Pat. 2,431,004. METHOD FOR PRODUCING ETHYL ALCOHOL, Lynford J. Wickerham, patented November 18, 1947. Starch material is converted into ethyl alcohol by fermentation. The process is carried out employing Endomycopsis fibuliger and varieties of this organism together with strongly fermentative yeasts. The Endomycopsis species function as starch-converting agents and the yeasts function to produce ethyl alcohol from the starch-conversion products. The fermentation is based upon the principle of symbosis involving the two types of organisms.

Pat. 2,432,638. METHOD FOR THE ISOLATION OF PENICILLIN, Jacques L. Wachtel, patented December 16, 1947. Penicillin is present in extremely small quantities in biological fluids, such as the fermentation liquor resulting from the culture of penicillin-producing molds. The patent covers a method for the recovery of penicillin comprising adsorbing the penicillin from the neutralized and filtered fermentation liquor onto activated carbon. The carbon is then separated from the liquor and the penicillin eluted from the carbon with an aqueous solution of an organic aliphatic alcohol of at least 4 carbon atoms having a substantial concentration of water.

Pat. 2,433,849. CORK SUBSTITUTE AND A PROCESS FOR ITS PRODUCTION, Elbert C. Lathrop and Samuel I. Aronovsky, patented January 6, 1948. A cork substitute is made from finely divided particles of a pithy nature which contain groups of microscopic gas cells, incorporated in a proteinaceous body such as gelatin, glue, soybean protein or casein. The material has structure and properties similar to natural cork. Its properties may be controlled by modifying agents and plasticizers. A fluid medium is made from an elastomer of a proteinaceous nature, modifiers and plasticizers and comminuted cellulosic pithy particles. The medium is aerated to incorporate minute gas cells uniformly distributed throughout. The medium may be molded into any desired shape. (Reissued June 29, 1948, see Reissue No. 22,012)

Pat. 2,435,478. POLYAMIDES FROM POLYOCTADECAPOLYENYLAMINE, Howard M. Teeter and John C. Cowan, patented February 3, 1948. The patent relates to polyamides of polymeric fat acids and the polyamines obtained by hydrogenation of the nitriles of polymeric fat acids. The products are hard resinous solids, or tough, rubbery substances which become hard and resinous at low temperatures. They are suitable as bases for rubber substitutes with good low temperature characteristics.

Pat. 2,436,659. PROCESS OF MAKING D-SACCHARIC ACID, Charles L. Mehltretter, patented February 24, 1948. d-Saccharic acid is made by nitric acid oxidation of d-glucose. A non-catalytic method is described in which a reaction mixture containing 50 to 70 percent nitric acid is employed at 55° to 90° C. The ratio of acid to glucose is about 3 to 8 moles of acid per mole of glucose. The process avoids the use of expensive catalysts and produces d-saccharic acid in high yields.

Pat. 2,427,946. PLASTICIZED PROLAMINE COMPOSITION, Cyril D. Evans and Ralph H. Manley, patented March 16, 1948. Prolamines such as zein are made into coating compositions, films, filaments and molded plastics. The products are clear, transparent, flexible and waterproof. The solidifying compositions consist essentially of the prolamine as the film-forming or solidifying agency together with an amide of lactic acid as plasticizer.

Pat. 2,438,300. PROCESS FOR THE PURIFICATION OF ACETIC ACID BY AZEOTROPIC DISTILLATION, Lester E. Schniepp, patented March 23, 1948. Acetic acid occurs as a byproduct in the manufacture of butadiene from 2,3-butylene glycol diacetate. The patent covers the method of separating acetic acid from the mixture obtained by continuously adding water and continuously distilling off the water-azeotropes of other constituents of the mixture. After this treatment, acetic acid may be separated by simple distillation.

Pat. 2,442,141. METHOD FOR PRODUCTION OF PENICILLIN, Andrew J. Moyer, patented May 25, 1948. Penicillin is produced by incubating a penicillin-producing mold in an aqueous nutrient medium. The main nutrients are an assimilable carbon source and a proteinaceous substance. A portion of each is added at the beginning of the fermentation and additional increments are added during the period to compensate for that used up by the mold. The effect of this technique is to increase the overall yield of penicillin.

Pat. 2,442,928. FOOD PRODUCTS AND METHOD OF MAKING THEM, Majel M. MacMasters and Guido E. Hilbert, patented June 8, 1948. Starch, if pasted with water and gelatinized may be frozen to form a product which upon thawing, is porous and spongy. This phenomenon is utilized in the preparation of novel food products. A wide variety of food ingredients and flavors may be incorporated in the starch paste before freezing. The dried sponge, with or without such added ingredients, may be coated or admixed with other foods to make cookies, candy, and the like. The products have a pleasing crisp or crunchy texture.

Pat. 2,443,919. FERMENTATION PROCESS FOR PRODUCTION OF ALPHA-KETOGLUCONIC ACID, Lewis B. Lockwood and Frank H. Stodola, patented June 22, 1948. A nutrient medium containing gluconic acid or a soluble gluconate salt is inoculated with bacteria of the genus Pseudomonas. The desired product is obtained by continuing the fermentation beyond the stage at which 2-ketogluconic acid is formed. The submerged aerated technique is employed.

Pat. 2,443,989. METHOD FOR THE PRODUCTION OF PENICILLIN, Andrew J. Moyer, patented June 23, 1948. Penicillin is produced in greatly increased yield by the submerged aerated technique. A penicillin-producing mold is cultivated in an aqueous nutrient medium containing a source of assimilable carbon and a degraded proteinaceous material along with inorganic nutrients. The medium is agitated and aerated for a period of two to seven days.

Pat. 2,444,241. SOY WHIP, Arthur C. Beckel, Letta I. DeVoss, Paul A. Belter and Allan K. Smith, patented June 29, 1948. A light, foamy whip similar to beaten egg whites is manufactured from soybean meal. The whip does not possess a beany, grassy, or bitter flavor and may be utilized to introduce protein into candies and like materials, as a dessert topping, icing, etc. The material is obtained from soybean flakes that have been freed from oil and other alcohol solubles. The flakes are extracted with water and a proteinaceous material recovered from the extract from which the whip is made.

Pat. 2,445,128. BIOLOGICAL PROCESS FOR THE PRODUCTION OF RIBOFLAVIN, Fred W. Tanner, Jr., Lynford J. Wickerham and James M. Van Lanen, patented July 13, 1948. Riboflavin is produced in large yields by cultivating the microorganism, Ashbya gossypii. The fermentation is carried out under aerobic conditions in a medium containing a fermentable carbohydrate and a proteinaceous material. Particularly advantageous results are obtained when the proteinaceous material includes a constituent derived from an animal source together with a constituent derived from a plant source.

Pat. 2,445,931. PROCESS OF EXTRACTION FROM VEGETABLE MATERIALS, Arthur C. Beckel, Paul A. Belter and Allan K. Smith, patented July 27, 1948. Fatty oils and waxy solids are extracted from vegetable materials, such as soybeans, cottonseed, flaxseed, peanuts, tung nuts and the like with a lower alcohol (ethanol). The material is subjected to hot alcohol and the extract cooled until oil separates (about 20° C. or lower). The oil is separated and the alcohol further cooled to separate solid material. The alcohol is then re-used without distillation refinement for further extraction of the material. The two cooling steps may be combined to cause removal of oil and solids together. The process has become known as the "no distillation" process.

Pat. 2,449,340. VITAMIN B-COMPLEX CONCENTRATE, Fred W. Tanner, Jr., and James M. Van Lanen, patented September 14, 1948. A feed supplement rich in vitamin B-complex is produced by fermenting under submerged aerated conditions a fermentation medium employing fungi of the Penicillium notatum-chrysogenum group. The feed supplement is recovered from the fermentation mass by removing the bulk of the water. The supplement consists of the mycelium, suspended matter, and other solids. The process is particularly applicable to the recovery of a valuable byproduct in the manufacture of penicillin.

Pat. 2,450,586. PROCESS FOR SACCHARIFYING PLANT MATERIALS, John W. Dunning and Elbert C. Lathrop, patented October 5, 1948. The saccharification of plant material is claimed, including the steps of progressive degradation in a plurality of successive stages. The plant material is first treated with 1 to 6 percent sulfuric acid at 100 to 121° C. to convert pentosans into pentoses and furfural. The residue, free of pentoses and containing entrained acid is dried and mixed with 0.15 to 0.55 part concentrated sulfuric acid. The mixture, a free flowing powder, is subjected to mechanical mastication for a short period at below 45° C. The latter treatment converts the powder into a stiff plastic mass and is accompanied by further degradation of the cellulose. The mastication is stopped just short of the formation of substantial amounts of dextrose. The treated material is then hydrolyzed to produce dextrose.

Pat. 2,450,940. POLYAMIDES FROM POLYMERIC FAT ACIDS, John C. Cowan, Lee Dert Falkenburg, Howard M. Teeter, and Philip S. Skell, patented October 12, 1948. A hard fusible polyamide resin is produced by heating polymerized polyene fatty acids or their functional derivatives with an equivalent amount of diamine. The temperature of reaction is below 160° C. at the start and thereafter is raised to 175° to 225° C. The product has a molecular weight of 3000 to 5000 and is valuable as a heat-sealing resin.

Pat. 2,451,567. PROCESS FOR PREPARING STARCH HYDROLYZING ENZYME WITH ASPERGILLUS, Elmer H. Le Mense and James M. Van Lanen, patented October 19, 1948. A starch hydrolyzing enzyme complex containing dextrinizing and saccharifying enzymes is prepared by cultivating certain strains of Aspergillus. The product is a fungal amylase capable of totally replacing barley malt for converting grain mashes in a distillery or for manufacturing food syrups and sweetening agents.

Pat. 2,453,150. POLYESTERS OF DIMETHYLENE D-GLUCONIC ACID, Charles L. Mehltretter, patented November 9, 1948. Dimethylene d-gluconic acid is dissolved in an anhydrous solvent such as a tertiary amine, for example pyridine. The solution is treated with an acid halide, preferably a benzyl halide, to effect condensation polymerization, forming the polyester of the acid. The polyesters are linear polymers containing dimethylene gluconyl groups as the repeating units. They are relatively insoluble in the usual solvents, useful in the production of coating compositions, synthetic fibers and adhesives.

Pat. 2,455,981. ALKALI PROCESS FOR WHEAT STARCH PRODUCTION, Robert J. Dimler, patented December 14, 1948. Wheat flour is treated with 6 to 12 parts of aqueous alkali at a pH of at least 10.5 and below the gelatinizing temperature of the starch. A homogeneous dispersion of the protein is formed, from which the starch granules may be separated by usual methods such as tabling or centrifuging. The protein may be recovered from the dispersion by acidifying to a pH of about 5.0 to 6.0 and removing the precipitated protein.